AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended): A device for reducing the phase noise of a quasiperiodic signal [[(S_{in})]] coming from a quasiperiodic source of fundamental frequency f_0, ~~characterized in that it comprises~~ comprising a physical system for transmitting pulses by transferring particles, said physical system being defined so as to have a characteristic frequency f_c defining an operating frequency range of the device with a low limit that is dependent on said characteristic frequency, in such a way that, for the quasiperiodic signal [[(S_{in})]] applied as input, said particles have a mutual repulsive interaction and said physical system delivering, as output, pulses at the fundamental frequency f_0.

2. (currently amended): The device for reducing the phase noise of a quasiperiodic signal [[(S_{in})]], coming from a quasiperiodic source of fundamental frequency f_0 as claimed in claim 1, ~~wherein it comprises~~ comprising a superconducting circuit with an active line for voltage pulse transmission by transferring quanta of flux ϕ_0, said circuit being defined so as to have a characteristic frequency f_c such that $0.3f_c$ is less than or equal to the fundamental frequency f_0 of the quasiperiodic signal [[(S_{in})]] applied as input, and delivering, as output, a voltage pulse signal of fundamental frequency f_0.

3. (previously presented): The phase noise reduction device as claimed in claim 1, comprising at least two superconducting circuits, namely a circuit for a π phase shift of the input or of the output of one of said circuits and a combiner circuit for producing a frequency-doubling stage in a frequency multiplication circuit.

4. (previously presented): The phase noise reduction device as claimed in claim 2, wherein the superconducting circuit comprises a Josephson transmission line geometrically defined with said characteristic frequency.

5. (previously presented): The phase noise reduction device as claimed in claim 4, wherein the Josephson transmission line is a long Josephson junction.

6. (previously presented): The phase noise reduction device as claimed in claim 4, wherein said transmission line comprises a plurality of parallel-shunted Josephson junctions.

7. (previously presented): The phase noise reduction device as claimed in claim 6, wherein each Josephson transmission line is of the type comprising a line with bicrystal junctions.

8. (previously presented): The phase noise reduction device as claimed in claim 6, wherein each Josephson transmission line is of the type comprising a line with ramp-edge junctions.

9. (previously presented): The phase noise reduction device as claimed in claim 5, wherein the superconducting circuit comprises several Josephson transmission lines placed in parallel.

10. (previously presented): The phase noise reduction device as claimed in claim 9, wherein it comprises a π phase shift circuit at the input of at least one transmission line, applying a phase-shifted signal to said line.

11. (currently amended): The phase noise reduction device as claimed in claim 10, wherein said phase shift circuit receives as input the input signal [[(S_{in})]] of the device.

12. (previously presented): The phase noise reduction device as claimed in claim 10, wherein said phase shift circuit receives as input the output signal from a line.

13. (previously presented): The phase noise reduction device as claimed in claim 11, wherein the superconducting circuit comprises n Josephson transmission lines of rank 1 to n in one and the same surface plane of a substrate, with n an integer ≥ 2, and in that one signal among the input signal and the phase-shifted input signal is applied to the lines of even rank and the other signal is applied to the lines of odd rank, the output signal being delivered as output of one of the n lines.

14. (currently amended): The phase noise reduction device as claimed in claim 5, ~~wherein it comprises~~ comprising current bias means ~~comprising~~ with a plurality of branches for feeding the current, in order to distribute this current along each Josephson transmission line.

15. (currently amended): The phase noise reduction device as claimed in claim 14, comprising ~~wherein it comprises~~ means for adjusting the intensity of the bias current according to the frequency of the input signal.

16. (previously presented): The phase noise reduction device as claimed in claim 2, wherein the superconducting circuit comprises a vortex flux-flow voltage-pulse transmission line.

17. (currently amended): The phase noise reduction device as claimed in claim 16, wherein said transmission line comprises a superconducting film of type II in the hybrid state, deposited on a crystalline substrate, said film being current-biased at its ends and comprising a slot in the width direction, except at the point of a microbridge, said slot separating the film into two parts, and ~~characterized in that~~ wherein the quasiperiodic signal is applied to one end of the slot, between the two parts of the film, and the output signal is obtained at the other end of the slot, between the two parts of the film.

18. (currently amended): The phase noise reduction device as claimed in ~~either of~~ claim 16, wherein said superconducting device is immersed in a DC magnetic field oriented perpendicular to the surface plane of the slot.

19. (currently amended): Phase noise reduction device as claimed in claim 1 [[18]], wherein the superconducting circuit or circuits use a high critical temperature superconductor.

20. (new): Phase noise reduction device as claimed in claim 2, wherein the superconducting circuit or circuits use a high critical temperature superconductor.